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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/053,559	01/24/2002	Sven Ivan Hommeltoft	H0610.0002/P002	3293
24998	7590	01/26/2005	EXAMINER	
DICKSTEIN SHAPIRO MORIN & OSHINSKY LLP 2101 L Street, NW Washington, DC 20037			CHIN, BRAD Y	
			ART UNIT	PAPER NUMBER
			1744	

DATE MAILED: 01/26/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/053,559

Applicant(s)

HOMMELTOFT, SVEN IVAN

Examiner

Brad Y. Chin

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 January 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1 and 3-6 is/are rejected.
- 7) ☒ Claim(s) 1-6 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 January 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. _____.
 - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 6/02, 7/02, 3/04.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Objections

1. Claims 1-6 are objected to because of the following informalities:

In claim 1, line 6, Applicant should amend the claim language to include use of a gerund to introduce the method claim limitation for the separation tray, e.g. "providing a separation tray".

In claim 1, line 8, Applicant should change the word, "a" to "the".

In claim 1, line 13 and claim 2, line 2, Applicant should replace the words, "by means of" with a gerund, e.g. "...into a light and a heavy fraction using a float...".

In claims 2-4, Applicant should amend the claim language to include use of gerunds for introducing method claim limitations, e.g. "...wherein the method further performing the first gravity separation by..." and "...and, performing the float separation by...".

In claim 5, line 2, Applicant should amend the word, "anyone" to "any one".

In claim 5, line 4, Applicant should add the word "the", following the word, "at".

In claim 5, line 9, Applicant should amend the words, "contraction inserted" to "contracted installed".

In claim 6, line 1, Applicant should add the word, "the", preceding the words, "top cover".

Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter, which the applicant regards as his invention.

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2. Claims 5 and 6 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 5, line 5 recites the limitation, "the light fluid" and recites the limitation, "the heavy fluid" in line 7. There is insufficient antecedent basis for this limitation in the claim. Claim 5 is an independent product-by-process claim. It is believed that Applicant relies on the preceding method claims for antecedent basis. Appropriate correction is required.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

3. Claims 1, 3, and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over McNamara [U.S. Patent No. 2,609,277].

Regarding claim 1, McNamara teaches a method for separating a two-phase mixture of two immiscible fluids into a first fluid and a second fluid using gravity

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separation, more particularly float separation, using a float having a density between the densities of the two fluid fractions, comprising the steps of a separation tray, subjecting the two-phase mixture to a gravity/float separation and withdrawing separately the first and the second fluid (See Specification, col. 3, lines 56-60 – The present invention is adapted to the treatment of any two immiscible liquids having specific gravities sufficiently different from one another so that they may be readily separated under the influence of gravity; See Specification, col. 4, lines 11-13 – The present invention makes possible the efficient and effective use of a tray column for liquid-liquid contact).

McNamara further teaches continuous countercurrent contact of the liquid material to be purified or resolved into fractions and the solvent in a vertical column (See Specification, col. 1, lines 4-16; See Figs. 1 and 2).

McNamara fails to teach the method further simultaneously separating at least one of the first and second fluids into a fraction with high density and a fraction with low density where the fractions are miscible.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to teach the method of McNamara further simultaneously separating at least one of the first and second fluids into a fraction with high density and a fraction with low density where the fractions are miscible because McNamara provides the motivation to one of ordinary skill in the art to continuously countercurrently contact the liquid material to be purified or resolved into fractions in the aforementioned vertical column (See Specification, col. 1, lines 4-16; See Figs. 1 and 2). McNamara teaches the use of a float for float separation having a density between the densities of two fluid fractions, where the float (10) is adapted to rest at the interface between the layer of heavier liquid in the extreme bottom of column 1 and the layer of lighter liquid thereabove (See col. 4, lines 66-69). It is well known in industry, such as the petroleum

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industry, to provide for the separation of liquids and gases into the lightest and heaviest fractional constituents for production of gasoline, liquid petroleum gases (LPGs), kerosene, etc. Accordingly, it would have been obvious to further simultaneously separate either the first or second separated liquid of McNamara further into its fractional miscible constituents based on the densities of the fractions using the float means provided for in McNamara.

Regarding claim 3, McNamara teaches a method in accordance with claim 1, wherein the first fluid and the second fluid is a liquid (See Specification, col. 4, lines 43-48 – contacting of immiscible fluids of different specific gravities...this invention will apply to gas-liquid contacting as well as liquid-liquid contacting, however, it will probably be most applicable to the latter.).

Regarding claim 4, McNamara teaches the method in accordance with claim 1, wherein the first fluid is a liquid and the second fluid is a gas (See Specification, col. 4, lines 43-48 – contacting of immiscible fluids of different specific gravities...this invention will apply to gas-liquid contacting as well as liquid-liquid contacting, however, it will probably be most applicable to the latter.).

Allowable Subject Matter

4. Claim 2 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. The following is a statement of reasons for the indication of allowable subject matter:

The limitations of Claim 2 could either not be found or were not suggested in the prior art. The limitations of Claim 2 not found include the method for separating a two-phase mixture of immiscible fluids where the separation tray comprises a plurality of first

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and second chimneys, where one of the chimneys has a float installed in it for separating one of the fluids into a light and a heavy fraction.

The closest prior art of McNamara teaches an apparatus and method for liquid-liquid and liquid-gas separation using a float having a density between the densities of the two fractions, but fails to teach use of a plurality of first and second chimneys, where one of the chimneys has a float installed in it for separating one of the fluids into a light and a heavy fraction as claimed in the present invention.

None of the references teach the claimed limitations nor would it have been obvious to combine references to achieve the claimed inventive subject matter; thus, claim 2 is free of the prior art and would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

5. Claims 5 and 6 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action. The following is a statement of reasons for the indication of allowable subject matter:

The limitations of Claims 5 and 6 could either not be found or were not suggested in the prior art. The limitations of Claims 5 and 6 not found include the apparatus for separating a two-phase mixture of immiscible fluids where the separation tray comprises a plurality of first and second chimneys, where one of the chimneys has a float installed in it for separating one of the fluids into a light and a heavy fraction.

The closest prior art of McNamara teaches an apparatus and method for liquid-liquid and liquid-gas separation using a float having a density between the densities of the two fractions, but fails to teach use of a plurality of first and second chimneys, where one of the chimneys has a float installed in it for separating one of the fluids into a light and a heavy fraction as claimed in the present invention.

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None of the references teach the claimed limitations nor would it have been obvious to combine references to achieve the claimed inventive subject matter; thus, claims 5 and 6 are free of the prior art and would be allowable if rewritten to overcome the aforementioned objections and rejections.


Conclusion

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brad Y. Chin whose telephone number is 571-272-2071. The examiner can normally be reached on Monday – Friday, 8:00 A.M. – 5:00 P.M.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Warden, can be reached at 571-272-1281. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

byc
January 19, 2005


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